CLAIMS:

1. A fabric of continuous filament non-textured yarn, said fabric comprising:

(a) a base portion, and

(b) a pile portion,

(c) wherein said pile portion projects from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged upon said base portion in rows, wherein said tufts provide a degree of surface coverage upon said base portion such that said rows when viewed from an edge perspective provide an average void area between each respective row of less than about 0.41 square millimeters at a fabric gauge of about 32 tufts per inch.

2. The fabric of claim 1, wherein said fibers are characterized by substantially uniform cross-sectional geometry along their length.

3. The fabric of claim 2, wherein said fiber cross-sectional aspect ratio is about 1.

4. The fabric of claim 1, wherein said fiber cross-sectional aspect ratio is greater than 1.

5. The fabric of claim 1, wherein the average amount of said average void area observed between said respective rows is equal to or less than about 0.35 square millimeters.

6. The fabric of claim 1, wherein said fibers are comprised of at least one material selected from the group consisting of: polyester, nylon and polypropylene.

7. The fabric of claim 1, wherein said fibers are heated and drawn simultaneously, said heating/drawing time being no greater than about 0.063 seconds.

8. The fabric of claim 1, wherein said fibers are heated and drawn simultaneously, said heating/drawing time being no greater than about 0.056 seconds.

9. The fabric of claim 1, wherein said fibers are heated and drawn simultaneously, said heating/drawing time being no greater than about 0.052 seconds.

10. The fabric of claim 1, wherein said fibers are heated and drawn simultaneously, said heating/drawing time being no greater than about 0.047 seconds.

11. The fabric of claim 1 wherein the average void area between rows is between about 0.21 and about 0.41 square millimeters.

12. The fabric of claim 1, wherein the average void area between rows is between about 0.21 and about 0.35 square millimeters.

13. The fabric of claim 1, wherein said fibers consist essentially of partially oriented polyester.

14. The invention as recited in claim 13, wherein said fibers of said fabric are heat shocked during drawing of said fibers at a temperature of greater than about 200 degrees Centigrade.

15. A fiber manufactured by the following steps:

(a) providing a continuous filament non-textured fiber,

(b) drawing said fiber while heating with a heater in a draw zone at:

i) a temperature of at least about 200 degrees Centigrade, and

ii) a draw ratio of greater than 1.0;

iii) a heater contact time of no greater than about 0.063 seconds;

iv) wherein said fiber is pre-stressed to yield a shrinkage greater than about 7% and an elongation greater than about 40%; and

(c) placing said fiber into a fabric construction; and

(d) applying heat to said fabric construction.

16. The fiber of claim 15 wherein said heating step time is no greater than about 0.056 seconds.

17. The fiber of claim 15 wherein said heating step time is no greater than about 0.052 seconds.

18. The fiber of claim 15 wherein said heating step time is no greater than about 0.047 seconds.

19. The fiber of claim 15 wherein said temperature in said draw zone at least about 215 degrees Centigrade.

20. The fiber of claim 15 wherein the percent shrinkage of said fiber after manufacture is at least about 12 percent.

21. The fiber of claim 15 wherein the fabric construction is tufted.

22. The fiber of claim 15 wherein said draw ratio applied to said fiber in said draw zone is at least about 1.14.

23. A manufacturing process, comprising:

(a) providing a continuous filament non-textured fiber,

(b) drawing said fiber during heating:

i) at a temperature of at least about 150 degrees Centigrade, and

ii) at a draw ratio of greater than 1.0; and

iii) for a heating time of no greater than about 0.063 seconds; and

iv) wherein said fiber is pre-stressed into a meta stable condition and provides a shrinkage of at least about 7% and an elongation of greater than about 40%; and

(c) compiling said fiber into a fabric; and

(d) heating said fabric to release said pre-stressed condition of said fibers.

24. The process of claim 23 wherein said draw ratio applied to said fiber during said drawing step is at least about 1.14.

25. The process of claim 23 further comprising the following steps:

said fabric is tufted.

26. The process of claim 23 further wherein:

said fabric is woven velour.

27. The process of claim 25 wherein said fabric further comprises a pile portion, said pile portion projecting from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged upon said base portion in rows, wherein said tufts provide a degree of surface coverage upon said base portion such that said rows when viewed from an edge perspective provide an average void area between each respective row of less than about 0.41 square millimeters at a gauge of about 32 tufts per inch and an aspect ratio of about 1.

28. The process of claim 26 further wherein said fabric further comprises a pile portion, said pile portion projecting from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged upon said base portion in rows, wherein said tufts provide a degree of surface coverage upon said base portion such that said rows when viewed from an edge perspective provide an average void area between each respective row of less than about 0.41 square millimeters at a gauge of about 32 tufts per inch along said edge and said fiber has an aspect ratio of about 1.

29. The process of claim 27 wherein said average void area between each respective row is less than about 0.21 square millimeters.

30. The process of claim 28 wherein said average void area between each respective row is about 0.21 square millimeters or less.

31. In the manufacture of tufted fabric, said tufted fabric including rows of yarn, said tufted fabric providing a cross-sectional void area viewed along an edge being designated as A, the improvement of the invention comprising:

providing fabric of continuous filament non-textured yarn, said fabric comprising:

(a) a base portion, and

(b) a pile portion,

(c) wherein said pile portion projects from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged in rows, said rows being arranged so that when viewed from an edge perspective said rows provide a predetermined number of tufts per inch, said rows further providing when viewed in edge perspective an average void area which is less than about 90 percent of A,

where A is given in square millimeters by:

$A = 0.26 - 0.03083 * (G - 44)$

and wherein G is the gauge of said fibers, said gauge being measured in tufts per inch.

32. In the manufacture of tufted fabric, said tufted fabric including rows of yarn, said tufted fabric providing a cross-sectional void area viewed along an edge being designated as A', the improvement of the invention comprising:

providing fabric of continuous filament non-textured yarn, said fabric comprising:

(a) a base portion, and

(b) a pile portion,

(c) wherein said pile portion projects from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged in rows, said rows being arranged so that when viewed from an edge

perspective said rows provide a predetermined number of tufts per inch, said rows further providing when viewed in edge perspective an average void area which is less than about 90 percent of A',

where A' is given in square millimeters by:

$A' = 0.26 - 0.0767 * (AR - 1)$;

wherein AR is the cross-sectional aspect ratio of said fibers.

33. In the manufacture of tufted fabric, said tufted fabric including rows of yarn, said tufted fabric providing a cross-sectional void area viewed along an edge being designated as A", the improvement of the invention comprising:

providing fabric of continuous filament non-textured yarn, said fabric comprising:

(a) a base portion, and

(b) a pile portion,

(c) wherein said pile portion projects from said base portion, said pile portion comprising a plurality of tufts, at least a portion of said tufts comprising groups of continuous filament non-textured fibers, said tufts being arranged in rows, said rows being arranged so that when viewed from an edge perspective said rows provide a predetermined number of tufts per inch, said rows further providing when viewed in edge perspective an average void area which is less than about 90 percent of A",

where A" is given in square millimeters by:

$A'' = 0.26 - 0.03083 * (G - 44) - 0.0767 * (AR - 1)$;

wherein G is the gauge of said fibers, said gauge being measured in tufts per inch; and

wherein AR is the cross-sectional aspect ratio of said fibers.